Senate Energy & Telecomm.Comm.
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Citizens for Clean Energy, Inc

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WIND, WATER AND FUTURE

The Honorable Jerry Black
Montana Senate
Chair, Senate Energy & Telecommunications Committee
PO Box 200500
Helena, MT 59620-0500

2 February 2009

Dear Senator Black and members of the Senate Energy and Telecommunications Committee,

I am Lt. Colonel (Ret., USAR) Richard D. Liebert and farm and ranch in Cascade County. As chair of Citizens for Clean Energy, Inc. (CCE) I thank you for your invitation to allow CCE to participate in an informational hearing on energy permitting. We appreciate the scheduling challenges you have faced and we would still like to share our ideas if the opportunity arises.

It was a pleasure to to meet you at the MT Farmers Union discussion of the wind-farms and MATL project last June in Great Falls. I am a founding member of the MFU's 25 x 25 renewable energy committee and served in the Agriculture, Waste Management and Forestry working group of the Governor's Climate Change Advisory Committee. My education includes a B.S. in agriculture from Purdue University and a masters from Touro University International.

CCE is a diverse, all volunteer, non-profit and non-partisan grassroots organization. We also desire a sustainable energy future for Montana where we can harness the sun, wind and soil, develop a smarter-grid, promote energy-efficiency/conservation, employ feasible IGCC (at coal mine-mouth) and develop a smoother permitting process that still embraces the right of the public to participate as per our state Constitution. This includes due-process, protection of private property (including water/mineral rights), and sound diligence. Development is vital, but so is transparency, oversight, accountability and *'measure twice and cut once'* up front.

CCE also assisted the state Department of Commerce in providing recommendations to improve transmission permitting procedures in regards to 'lessons learned' from the **MATL** project and invited the project team to one of our meetings last year to share constructive feedback. I might suggest the committee considering inviting **T. Boone Pickens (pickensPlan.com)** to a joint senate house energy committee gathering, as he'll be in Montana later this month. He understands the transmission challenges we must deal with and has other energy insights.

Calving season is now upon me, but should the invitation be extended again, my fellow CCE officers and supporters will be able to participate if I'm tending to livestock and feeding.
I can be personally reached at 406-736-5791 and e-mail at wwranch@3rivers.net. Attached are a few articles on smart-meters, the Pickens Plan, US Army ***'green'*** projects and energy use.

Very Respectfully,

Richard Liebert
289 Boston Coulee Road (Eden RR), Great Falls, MT 59405 ***'Carpe Ventum'***

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The Daily Roar

Daily Newspaper created by the Soldiers, for the Soldiers

VOL. 1, NO. 310 MULTI-NATIONAL DIVISION – BAGHDAD DECEMBER 20, 2008

Quality of life improves as Iraq's national power grid climbs

by Spc. Dustin Roberts
2nd HBCT PAO, 1st Inf. Div.

BAGHDAD – The Government of Iraq, backed by Coalition Forces, has come along way since 2007 in providing the citizens of northwest Baghdad the power they need to run home appliances and businesses.

Many government projects, to include power plants, solar panels and micro generation have been completed and more will be set in place to meet the needs of the people's growing demand for power, said Mahdi Jonny, bilingual, bicultural electrical engineer, joint project management office, 2nd Heavy Brigade Combat Team, 1st Infantry Division, Multi-National Division – Baghdad.

"Iraq has scattered electrical generation plants comprised of thermal, hydro, gas turbine and diesel," said Jonny. "There are also imports from three different countries: Iran, Turkey and Syria.

The imported energy from the three countries provides eight thousand megawatts on a daily basis, which increased from almost six daily megawatts last year, have lightened the load on demand of national power.

Jonny said that compared to last year, the citizens of northwest Baghdad are getting a better supply of power, but still don't have the grid power to run equipment to run 24-hour operations.

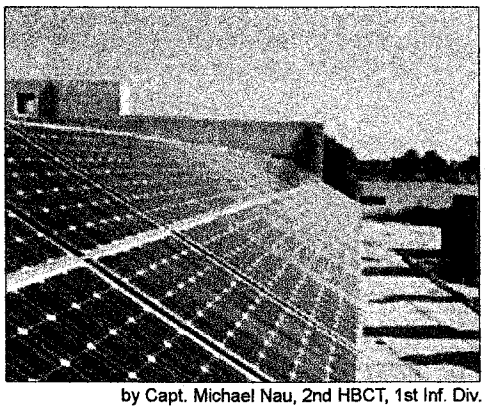
"If you really look at the weekly Iraq energy analysis overview that is generated by the Iraqi Energy Fusion Cell of the International Zone, they show that there are certain key events and engagements that have happened between the Coalition Forces and the Ministry of Electricity," said Jonny. "What this means is we have increased the flow of oil by 150 thousand barrels a day."

Jonny added that the plants will receive most of the oil so they can continue running at 100 percent.

"That being said, there are also a lot of areas already initiated, such as the construction of more power plants and this is ultimately translated into an increased power supply."

Other plans for more power are under way for the near future, including a power plant project in Hurriyah, a neighborhood in the Kadhamiyah district of northwest Baghdad.

"I don't think we even know of all the projects that are going on but what we do know is that there is a major power plant under construction in Hurriyah that is probably going to come on line within the next 12 months, and this will add a substantial amount of power to the grid," said Col. Gerald Gibbons, Expanded Provincial Reconstruction Team representative, 2nd HBCT, 1st Inf. Div. "The demand has gone up substantially and the supply has not gone up at the same rate. The demand has exceeded the supply, and the supply has to catch up by generation of more power."



by Capt. Michael Nau, 2nd HBCT, 1st Inf. Div.

Recently installed solar panels sit atop the roof of the Ameriyah clinic in northwest Baghdad.

Gibbons explained how the process of energy circulation works in Iraq.

"In the three major components to the power circulation, (which are) generation, transmission and distribution, the government of Iraq is doing a good job of transmitting and distributing power among the population," he said. "The bottom line is the generation has not kept up with the demand; they simply need to generate more power."

Another way the Iraqi Government, local leaders and Coalition Forces have alleviated the grid's electricity has been through micro generation, or the disbursement of fuel-powered generators throughout Baghdad.

"What we have done is provide power with micro generators, and with them, they get fuel enough to run eight hours a day," said Gibbons. "If companies or people have unlimited funds, they can buy their own generator and fuel and a fair amount of them do just that."

Gibbons also said these projects have greatly improved the quality of life for the citizens and they will allow them to keep their businesses open and their household appliances turned on.

Although the people of northwest Baghdad are happier because they are receiving power for longer hours, Jonny said the ultimate goal is to supply power to the population 24 hours per day.

"It's a matter of time until this happens; many companies have been contracted, and I'm sure the Ministry of Electricity and the Fusion Cell are in continuous engagement to close in on the supply and demand difference within the next two years," said Johnny. "Within five years, I think the electricity situation will be very different."

Buzz grows for modernizing energy grid
By Paul Davidson, USA
TODAY http://www.usatoday.com/money/industries/energy/2009-01-29-smart-grid-energy_N.htm

Alternative energy is taking it on the chin this recession, with solar and wind developers canceling projects and laying off workers. But a far more obscure slice of the energy sector is hotter than ever: the electricity grid.

How hot?

President Obama has made modernizing the nation's vast power network a key piece of his $819 billion economic stimulus plan, passed by the House Wednesday. Last weekend he called for the installation of 3,000 miles of transmission lines to carry renewable energy to population centers and 40 million smart electric meters in homes. The House bill sets aside $11 billion to help finance the investments.

Obama's endorsement of a sweeping upgrade to the century-old grid is jolting an industry already on a roll. Top power companies and lawmakers lately have called for an up to $1 trillion nationwide backbone electric grid.

Meantime, utilities and venture-capital firms are bucking the credit crisis and pouring billions of dollars into the "smart grid."

What's that? Simply put, the electric grid is finally following telecommunications, TVs and music into the digital age. Consumers with smart digital meters can better manage their electricity consumption and reduce their monthly bills. And utilities can more nimbly control the electricity that flows over their wires to prevent outages such as the 2003 Northeast blackout.

"It's like the Internet for the energy economy," says Katherine Hamilton, head of the GridWise Alliance.

Controversy

The proposal for a nationwide backbone grid is more controversial. Big wind and solar farms are planned for remote reaches such as the blustery Plains states and Arizona desert. But there aren't enough high-voltage lines to zap the power to coastal or Midwest urban centers. That's a problem: Many states impose renewable energy mandates.

Some states, meanwhile, don't want their residents to pay for lines they believe will spoil their rustic byways while largely benefiting neighboring states.

A 2005 law gave the feds new authority to designate special corridors for high-voltage lines and overrule states. But the process is cumbersome, and federal authority is murky.

Utility giants American Electric Power (AEP) and FPL Energy, the American Wind Energy Association and ITC Transmission are among those

saying the U.S. government should have sweeping powers to approve high-voltage lines, especially if they're transporting renewable energy. While states would have input — deciding, for instance, which route a line takes — the Federal Energy Regulatory Commission would have the final say and could allocate the cost burden among customers in various states.

"It's key to taking advantage of big swaths of renewable resources," says Susan Tomasky, AEP's transmission chief.

Sen. Jeff Bingaman, D-N.M., chairman of the Senate Energy Committee, says he plans to include the provision in an energy bill soon, adding the government "needs to play a larger role."

Although many states oppose the idea, a consensus is building for some type of expedited approval, says Reid Detchon, head of the Energy Future Coalition.

Meanwhile, a smart-grid rollout is already in high gear.

Even in last year's dismal second half, venture-capital firms pumped $183 million into smart-grid start-ups, as much as the previous four years combined, says Dow Jones VentureSource. That pace is likely to continue despite a recession that's slowing clean energy funding, says Greentech Media analyst Eric Wesoff. "2009 and 2010 are going to be the years of … the smart grid," he says.

About 70 utilities are proposing rollouts of smart grids costing $64 billion through 2016, says consulting firm KEMA.

Why?

While a solar-panel factory costs about $300 million, a venture capitalist can take a big stake in a smart-grid technology company for only $50 million. And capital expenses are more than recouped through cuts in electric bills, avoiding new power plants — key as utilities face greenhouse gas limits — and operational savings such as fewer truck dispatches, says Brattle Group consultant Ahmad Faruqui.

In turn, skeptical regulators are slowly warming to the idea of tacking charges on customer bills to fund the initiatives, says Fred Butler, head of the National Association of Regulatory Utility Commissioners.

Another driver: Utilities are starting to install gear that relies on common standards, such as those used on the Internet, instead of proprietary technology. That's opening the market to more suppliers, says Adam Grosser of Foundation Capital, a smart-grid investor. Start-ups such as GridPoint and SmartSynch are developing software and sensors to run the grids.

Some benefits:

•Smart meters. Today, most consumers pay the same price for electricity, day or night. Digital meters let utilities offer variable prices to reflect wholesale power costs, like cellphone plans. Rates are typically highest at midday, when electricity usage peaks, and lowest in the wee hours.

Smart meters already are in 5% of U.S. homes and businesses, up from 1% two years ago, though many don't offer variable pricing yet. The devices will be linked to 40% of homes in five years, a recent FERC report says.

Consumers that choose time-of-use pricing are prodded to cut air conditioning use on hot days when the grid is stressed and shift, say, their laundry to later in the evening. Utilities avoid building plants needed only at peak hours. Customers on variable pricing in southern Illinois save about 10% on their bills, says program coordinator CNT Energy.

Companies such as GE are developing appliances that run at low levels when prices are high or turn on only after prices drop. Trilliant's software will even let consumers program their home networks from their iPhones.

•Plug-in electric vehicles. Car manufacturers plan to roll out large numbers of plug-in hybrid electric vehicles in a few years. But if they all charge their batteries during the day, the grid couldn't handle the load. So cars typically will be programmed to recharge at night, when the grid is sparsely used and wind turbines are spinning furiously.

By the same token, hybrids could become mini-generating plants at midday. They could be plugged into office garage outlets, primed to feed power to the grid when prices surge, says Elliot Mainzer of Bonneville Power Administration.

•Utility benefits. Smart meters let utilities read meters and turn power on or off remotely, avoiding technician visits. Xcel Energy is putting smart-grid technology to work across its network in Boulder, Colo. Sensors remotely alert technicians when a transformer or other equipment has failed — or even when it's about to fail — preventing outages and doing away with costly detective work. Substations, newly computerized, can talk to each other so overloaded circuits hand off electricity to underused ones. That can sidestep blackouts and the need to build generators.

Southern California Edison has new relays that isolate outages. Also, if voltage drops, capacitors automatically inject more to stabilize the grid or other generators kick in.

That's critical if wind turbines suddenly shut down as gusts taper off. And if there's too much wind or solar power, smart batteries can store it for later use.

Find this article at:
http://www.usatoday.com/money/industries/energy/2009-01-29-smart-grid-energy_N.htm

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U.S. Army to Build 500MW Solar Thermal Plant

In a green twist for the military, which typically likes to spend money on huge gas-guzzling vehicles, the Army recently promised to build a 500MW solar thermal power plant at Fort Irwin, California. The solar power plant will be a big part of an overall plan to reduce the Army's energy usage. The solar farm at Fort Irwin will wire into the public grid as well, so that excess energy can be doled out for the local area.

The announcement, made in a recent press release, gave no mention of how the system would be designed, nor which private company would build it. This solar thermal plant – along with other renewable efforts including geothermal, biofuels, and electric vehicles – is the first move made by the Army's new Senior Energy Council. This council will be, in effect, a board of directors in charge of energy policy, funding, and projects.

This is, however, not the first foray into solar power for the Army. There are currently ongoing solar projects at Fort Sam Houston in Texas, Fort Carson in Colorado, and a PV housing project at Fort Shafter in Hawaii.

Posted on October 27th in Solar News by Dan.

Related Posts

- New Solar Plant Heading For New Mexico

It's time to stop America's addiction to foreign oil.

In 1970, we imported 24% of our oil. Today, it's 70% and climbing.

We will send $700 billion to foreign countries this year. Money that is building their countries. Not ours.

My name is T. Boone Pickens. I've been an oil man all my life, but this is one emergency we can't drill our way out of. I have a plan that uses American technology and alternative energy to reduce our dependency on foreign oil by more than one third – and it can be done in 10 years.

It will take more than just a plan to make it happen. It will take real leadership. And it will take us working together to make this the top issue for the next President and Congress.

This is our crisis, and we can solve it.

To see my plan, come to my website at **PickensPlan.com**.

T. Boone Pickens

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Proudly paid for by T. Boone Pickens.

Image Courtesy of GE Energy.

By REBECCA SMITH 11/21/08

An unexpected drop in U.S. electricity consumption has utility companies worried that the trend isn't a byproduct of the economic downturn, and could reflect a permanent shift in consumption that will require sweeping change in their industry.

Numbers are trickling in from several large utilities that show shrinking power use by households and businesses in pockets across the country. Utilities have long counted on sales growth of 1% to 2% annually in the U.S., and they created complex operating and expansion plans to meet the needs of a growing population.

"We're in a period where growth is going to be challenged," says Jim Rogers, chief executive of Duke Energy Corp. in Charlotte, N.C.

The data are early and incomplete, but if the trend persists, it could ripple through companies' earnings and compel major changes in the way utilities run their businesses. Utilities are expected to invest $1.5 trillion to $2 trillion by 2030 to modernize their electric systems and meet future needs, according to an industry-funded study by the Brattle Group. However, if electricity demand is flat or even declining, utilities must either make significant adjustments to their investment plans or run the risk of building too much capacity. That could end up burdening customers and shareholders with needless expenses.

To be sure, electricity use fluctuates with the economy and population trends. But what has executives stumped is that recent shifts appear larger than others seen previously, and they can't easily be explained by weather fluctuations. They have also penetrated the most stable group of consumers -- households.

Dick Kelly, chief executive of Xcel Energy Inc., Minneapolis, says his company, which has utilities in Colorado and Minnesota, saw home-energy use drop 3% in the period from August through September, "the first time in 40 years I've seen a decline in sales" to homes. He doesn't think foreclosures are responsible for the trend.

Duke Energy Corp.'s third-quarter electricity sales were down 5.9% in the Midwest from the year earlier, including a 9% drop among residential customers. At its utilities operating in the Carolinas, sales were down 4.3% for the three-month period ending Sept. 30 from a year earlier.

American Electric Power Co., which owns utilities operating in 11 states, saw total electricity consumption drop 3.3% in the same period from the prior year. Among residential customers, the drop was 7.2%. However, milder weather played a role.

Utility executives question whether the recent declines are primarily a function of the broader economic downturn. If that's the case, says Xcel's Mr. Kelly, then utilities should continue to build power plants, "because when we come out of the recession, demand could pick up sharply" as consumers begin to splurge again on items like big-screen televisions and other gadgets.

Some feel that the drop heralds a broader change for the industry. Mr. Rogers of Duke Energy says that even in places "where prices were flat to declining," his company still saw lower consumption. "Something fundamental is going on," he says.

TIME IN PARTNERSHIP WITH CNN

Does Global Warming Compromise National Security?

By Bryan Walsh

It was overshadowed by the presidential campaign, but last Dec. 5 a bit of environmental legislative history was made. After repeated failures, and in the face of opposition from the White House, the Senate's Committee on Environment and Public Works passed legislation that would mandate greenhouse gas reductions for the American economy, a vital step to implementing a national carbor cap-and-trade program. What changed? The Democratic seizure of Congress in 2006 made a big difference, replacing global warming skeptic Sen. James Inhofe as committee chairperson with the green Sen. Barbara Boxer. But the real transformation came not from a Democrat but a Republican - the veteran Virginia Sen. John Warner. Though Warner had voted against similar measures in the past, this time around he not only supported the bill — which calls for cutting greenhouse gas emissions to 2005 levels by 2012, and then 70% below 2005 levels by 2050 — but co-sponsored it with Sen. Joseph Lieberman. "We had a bipartisan breakthrough, thanks to the wonderful John Warner," says Boxer.

Climate change is usually characterized as an environmental threat, but it wasn't melting icebergs or endangered polar bears that made Warner change his mind. "I have focused above all on issues of national security," Warner said after the bill passed committee. "I see the problem of global climate change fitting squarely within that focus." For Warner, unchecked global warming could create a world that is inherently more dangerous for the U.S. Acting to mitigate climate change was another way of keeping America safe. It's a message that resonates with Americans who would sooner log a tree than hug it, and raises the possibility that conservatives and liberals might find common ground on climate change. "I find [conservatives] skeptical on this issue," says James Woolsey, a right-leaning Democrat who was director of the Central Intelligence Agency between 1993 and 1995, unde

former President Bill Clinton. "But when I mention the connection to security, suddenly things like solar power start looking a lot better."

Last year saw a raft of studies tracing the linkage between global warming and global instability, and none was more influential than a report released last April by the CNA Corporation, a Pentagon-funded think tank. A team of 11 high-level retired officers — including Marine General Anthony Zinn former head of U.S. Central Command, which has responsibility for the Middle East — termed climate change a dangerous "threat multiplier." If unchecked, the report warned, warming could lea to resource wars, environmental refugees and failed states in already vulnerable regions of Asia, Africa and the Middle East — the very places where you'll find American troops today.

The retired officers who made up the CNA panel are hardly environmentalists, and many said they came to the report skeptical of climate change. That was then. "It's now a mainstream security issue, not a fringe movement for tree-huggers and Birkenstock wearers," says Sherri Goodman, who chaire the CNA report and served as deputy Undersecretary of Defense for environmental security in the Clinton Administration — a position that does not exist today. "It's affecting the lives of billions and so we've got to understand what those threats are, and how to plan for them and reduce them."

The dangers outlined by the CNA report mostly lie in the future, but there are security concerns connected to global warming that threaten us right now. The U.S. is increasingly dependent on foreign oil for its transportation needs, importing 60% of its petroleum, up from 40% during the firs Gulf War. Foreign oil dependence by itself isn't necessarily risky — the biggest share of our imports now comes from Canada, which hasn't been a threat since the War of 1812 or so. But much of that oil still comes from the Middle East, Russia and Venezuela — three parts of the world whose interests are often immiscible with those of the U.S. By burning ever-increasing amounts of oil, we're not only adding carbon dioxide into the atmosphere, but adding to the bank accounts of people who don't like us very much. The New York *Times*'s Thomas Friedman calls it the First Law of Petropolitics — as th price of oil goes up, we're effectively propping up hydrocarbon-fueled autocracies like Iran. Oil, firml above $100 a barrel, is now more expensive than it has ever been before — a level that might never have been reached if the U.S. had long ago made a concerted effort to shift to alternative fuels. Even as America spends up to $3 billion a week in Iraq, some of your gasoline bill is surely finding its way to al-Qaeda. "We're paying for both sides in the war on terror," says Woolsey. "That's about as nuts a a society can be."

No one knows that insanity better than the energy-intensive U.S. military, which is paying for our oil

in blood and treasure. A soldier in Gulf War I needed four gallons of fuel a day to support him; in 2006, each solider dispatched to Iraq and Afghanistan required 16 gallons of fuel a day. That figure will likely go up — in 2007, the military energy bill rose from $10.9 billion to $13 billion, burning 340,000 barrels of oil a day. Protecting petroleum supplies soaks up a huge chunk of the Pentagon's budget — $44.4 billion in 2003, according to a government consultant — while getting the fuel to troops on the front lines exposes convoys to roadside bombs and other dangers. It's little wonder tha an April study by the Pentagon concluded that its reliance on oil makes its ability to respond to globa hot spots "unsustainable in the long term." What's true for the armed forces today is true for the rest of the nation.

But the military, at least, is beginning to do something about it. In Iraq, Marine Major General Richard Zilmer requested renewable energy sources like solar panels and wind turbines, so that soldiers in the field could produce more of their own energy on site and reduce the need for vulnerable fuel convoys. By spraying desert tents with an adhesive foam that sealed open spaces, Army engineers were able to reduce energy loss in the camps by 50%. "Being more energy efficient puts fewer kids at risk," says Alan Schaffer, who runs the Pentagon's office of defense research and engineering.

Back on the bases, the Army has decreed that all new buildings should be at least Leadership in Energy and Design (LEED) standard, the baseline for green building. With the help of the private contractor Actus Lend Lease, the Army has put energy efficient housing in New York's sprawling For Drum, geothermal power in Louisiana's Fort Polk and the world's largest solar community in Hawaii The rest of the country should take note. "When the Army does something, it's worth looking at," say Tad Davis, deputy Assistant Secretary of the Army for environment, safety and occupational health.

At the same time, the sheer size of the U.S. military budget, compared to our spending on global warming, shows that the idea of climate security has a long way to go. A January report by the Institute for Policy Studies crunched the numbers: for every dollar Washington allocated to climate change in the 2008 budget, $88 would be spent on defense. The figures on research and developmer — vital given the need for government support of emerging clean tech — were almost as skewed. For every $1 to be spent on researching climate-related technologies, $20 would be spent on developing new defense systems. The cost of the war in Iraq will run into the trillions — money that might have kept America safer had it been spent on the climate instead. But global warming — long-term, diffus — remains a far more difficult threat to perceive than the lone terrorist or the rogue state. "It's much

easier to mobilize around a bad guy," says Goodman. "How do you mobilize against nature?"

If we want to survive the future, we'll need to learn how. But the two sides — climate and defense — needn't be opposed. In a recent paper, James Woolsey imagined a dialogue between John Muir, the founder of the Sierra Club, and General George Patton on climate change. In Woolsey's telling, Muir cares about the environment, and Patton about security, but in subject after subject — alternative energy, increasing efficiency, improving the electrical grid — they come to the same green conclusion if for different reasons. "It just happens that the two ideas produce the same outcome," says Woolsey "There is something there for everybody." — *With reporting by Mark Thompson/Washington*